

NOTE

A Note on the Mating Behavior of *Anoplius amethystinus* Fabricius (Hymenoptera: Pompilidae)

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To date, nothing has been reported on the biology of *Anoplius* (*Notiochares*) *amethystinus* Fabricius, a widespread New World pompilid ranging from Argentina to parts of the southern United States (California, Arizona, New Mexico, Texas, Georgia, Florida) (Wasbauer & Kimsey 1985). A handful of remarks may be found on the biology of related species; to this growing knowledge we add the following observations on *A. amethystinus*.

The encounter occurred in the Riverside Pine Island (longleaf pine (*Pinus palustris* Miller) woods) of the Ocala National Forest, Florida (29°25'N, 81°47'W). On 11 April 1997, around noon on a lightly overcast day, we noticed a group of male pompilids in the tire rut of a seldom-used, sandy dirt road. Our presence scattered them, but as soon as we stepped back 1-2 meters, they returned to an oblong area of sand (about 10 by 30 cm) in which it appeared that the surface debris of pine needles, dead leaves, and small twigs had been displaced to the periphery by the activities of the male wasps. We counted 12-15 males in this space at any one time, some flying off occasionally to circle the area or to visit nearby shrubs. They walked around in small circles, flicking their wings and drumming their antennae

on the ground. They did not fight or otherwise respond to each others' presence, although in their tight quarters they often touched each other.

After watching for a few minutes and capturing some of the males that flew out from the group, we swept aside the loose sand (about 5 mm deep) in the clear area, and then started excavating the compacted, cement-like sandy substrate. A few millimeters down we found the opening of a burrow (6 mm diameter) with a pompilid female near the top, scraping at the sand in an apparent effort to dig herself out: her wings were open and dry, and she flew directly into the waiting net. When we stepped aside, 4 or 5 males returned; several popped headfirst into the burrow, then backed out after a few seconds. Further excavation revealed an empty nest similar to those reported for *Anoplius* (*Pompilinus*) *tenebrosus* Cresson, *A. (P.) viaticus* L. (Alm & Kurczewski 1984), and *A. (Arachnoproctonus) apiculatus pretiosus* Banks (Kurczewski & Spofford 1986): exit tunnel straight, ca. 5 cm long, angled 50-60° from surface, with terminus unicellular and widened only very slightly.

Similar behavior in male *Anoplius* has been reported in a few other species. Rau (1922) found four males of *A. (Notiochares) atramentarius* Dahlbom gathered around a

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newly emerged female, and males of *A. tenebrosus* (Alm & Kurczewski 1984) and *A. apiculatus autumnalis* Banks (Evans et al. 1953) have been observed to fly low over sandy areas and occasionally alight. These observations and ours are consistent with the suggestion of Evans et al. (1953) that mating may only be successful with virgins in some species (but do not rule out other strategies). Such behaviors also imply the use of pheromones in combination with habitat cues in locating female emergence areas, and our observations in particular suggest that antennation of the ground may be involved in location of females at short range.

Voucher specimens (three males and the female) are deposited at the American Entomological Institute. We are grateful for the help of Mike McDonald, Rex Rowan, Bill Wcislo, John Wenzel, and several

anonymous reviewers, and we thank the staff of the Lake George Ranger District for granting us permission to work in the Ocala National Forest.

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